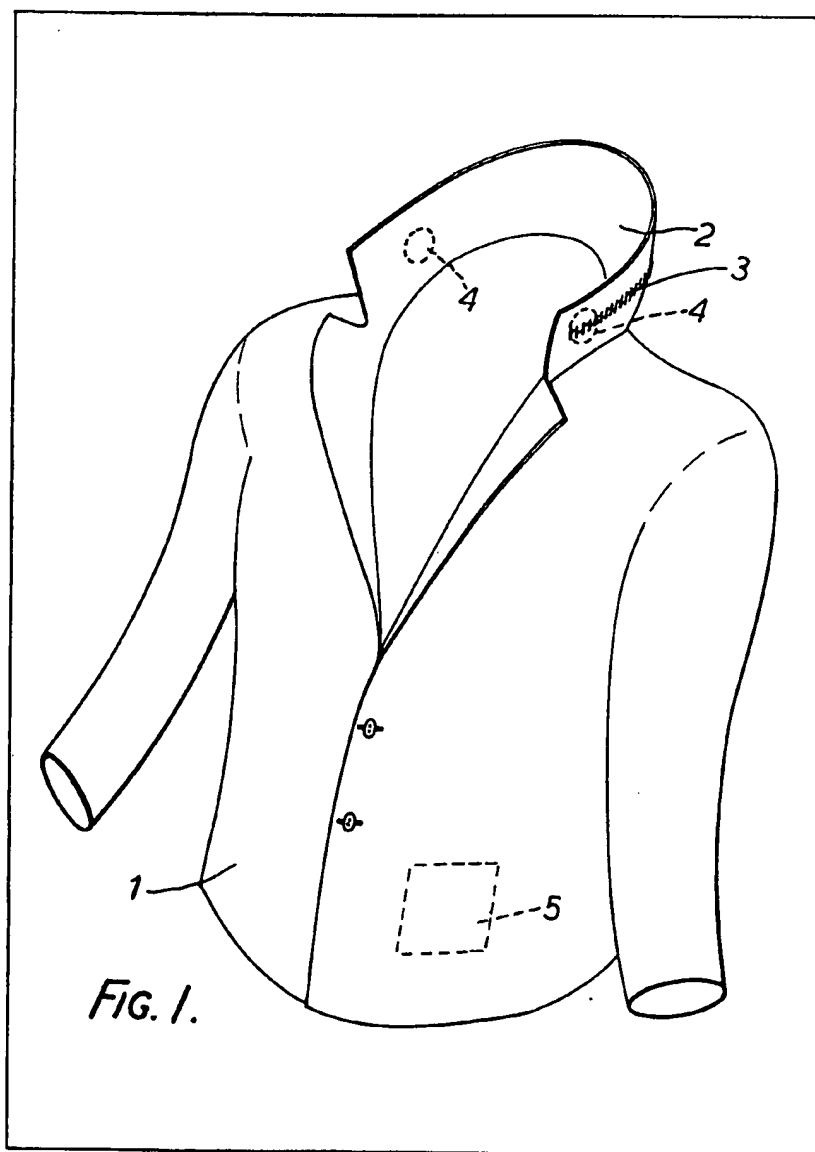


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(54) **Garment collar with
loudspeaker**

(57) A garment (1) has a collar (2)
with a loudspeaker (4) mounted inside
the collar (2) so that when the collar
(2) is turned up the loudspeaker is
directed towards the ear of the
wearer.



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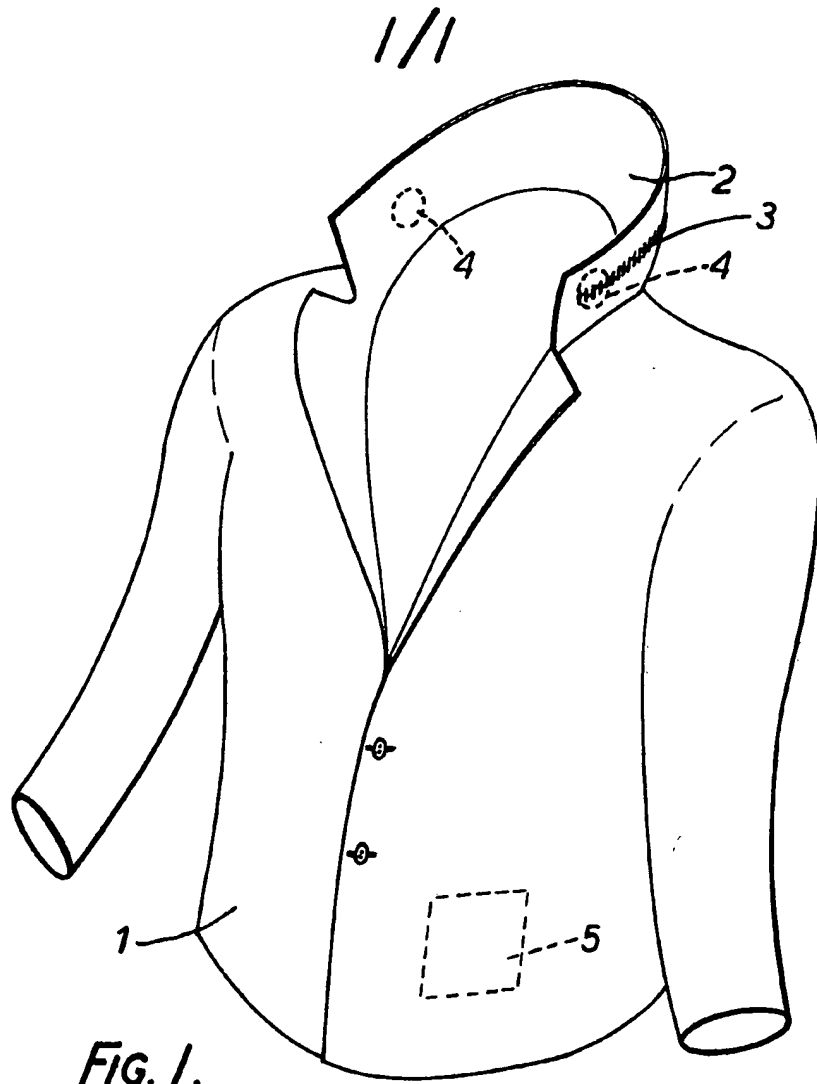


FIG. 1.

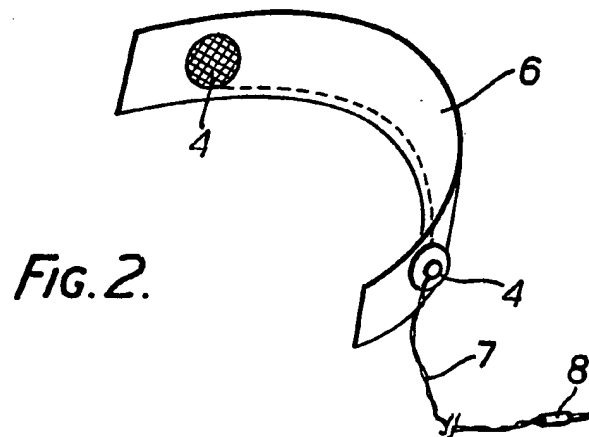


FIG. 2.

SPECIFICATION

Garment

The present invention relates to garments and, more particularly to garments having collars fitted with sound producing means.

- There often exists a need to listen to the sound reproduction of a source of electrical sound signals, such as a radio receiver or tape reproducing apparatus, when the listener is outside the reach of a substantially fixed sound source. Such listening can serve not only for purposes of diversion, but also for transmitting messages to ambulant persons, e.g. on a building site, in a factory or the like.
- Although portable radio apparatuses and the like are suitable for this purpose, they are often disturbing for others in the surroundings, in particular since the loudspeaker thereof is not directed towards the ear of the user, and is situated at some distance therefrom. Portable apparatuses having a loudspeaker which is to be kept against the user's ear have the disadvantage that, then, one hand is no longer free. Wearing earphones has the objection that the user can no longer hear other sounds which can be dangerous.
- It is known to attach one or more loudspeakers to be connected to a sound signal source on supporting means which can be worn on or near the shoulders of the user in such a manner that these loudspeakers are each directed towards one ear of the user. Such means in the form of supports or straps bearing on the shoulders are particularly suitable for operators of a telephone exchange, but can be objectionable in other cases, in particular because they have to be worn over the clothing, and will, then, be disturbing or conspicuous, and/or will hinder the work of the user or can get caught behind other objects, and, moreover, the loudspeakers will not always be sufficiently protected against rain and the like.

The present invention provides a garment having a collar which accommodates at least one loudspeaker therein positioned such as to be adjacent an ear of the wearer, the or each loudspeaker having means for connection to an electrical signal source.

Loudspeakers arranged in this manner are intended to be less disturbing and conspicuous, and do not hinder the work of the user. Moreover the effect of the loudspeakers can be improved still more by turning up the collar so that the loudspeakers will be situated nearer to the ear in question and can be directed thereto in a still better way.

Such a garment does not need to be distinct from the usual garments, including working clothes. In order to allow the loudspeakers to be removed, e.g. when the garment is to be cleaned or is worn out, preferably the collar, at least at the location of a loudspeaker, is provided with a closure adapted to be opened, so as to allow the loudspeaker to be removed.

Such loudspeakers are, in a preferred embodiment, arranged on a carrier fitting in the

collar, said carrier being desirably constructed as a rigidly-flexible plate with a shape adapted to the collar, by means of which the collar can be kept in shape, which can be advantageous, in particular when turning up the collar in order to position the loudspeaker nearer to the ears.

Furthermore such a garment can optionally be provided with an additional inside pocket for inserting therein an electrical sound signal source, and, preferably, apertures and/or hems can be provided in the garment for leading through connecting cords.

Moreover, in a preferred embodiment, at least the collar will be made at least partly of waterproof material so as to protect the loudspeakers against the effects of moisture.

In a further preferred embodiment one or more microphones can be provided in or near the collar if the electrical signal source is also constructed as a transmitter and/or recorder. This can, preferably, be suitable for working clothes if the user should be allowed to reply to calls, and then the associated transmitter/receiver should be provided with switching means situated within the reach of the hands so as to allow commutation from receiving to transmitting and vice versa, and also an apparatus adapted for recording should be provided with such commutating means. The garment can, preferably, be provided with switches or connecting means therefor arranged in an outer pocket or a sleeve.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying diagrammatic drawings in which:

Figure 1 is a perspective view of a garment; and Figure 2 is a perspective view of an insert provided with loudspeakers for such a garment.

In Figure 1 a garment in the form of a jacket 1 with a collar 2 is shown which collar is shown in the turned-up condition, but it can also be turned down. At the back side of the collar a zip fastener 3 is provided so that the interior of the collar becomes accessible, in which two small loudspeakers are arranged, the position of which is indicated at 4 by means of interrupted lines. Their position is such that they will be situated substantially below the ears of the wearer of this garment, and will each be directed towards a corresponding ear in the turned-up condition of the collar.

The loudspeakers 4 are provided with a connecting cord adapted to be connected to a portable radio and/or tape reproduction apparatus, which cord is led through a suitably finished passage in the collar or in the adjoining part of the jacket. This apparatus can, for instance, be carried under the jacket on a belt, or can be inserted into a pocket, for instance as indicated at 5. This apparatus should, of course, be accessible for being switched on and off and/or being tuned.

Figure 2 shows a preferred manner of mounting the loudspeakers 4. The latter are fixed at the desired distance on a strip of rigidly-flexible

material having a shape and dimensions which are adapted to those of the collar. After opening the zip fastener 3, the strip 6 can be inserted into the collar space, or can be removed therefrom. The latter is, for instance, necessary when the garment is to be cleaned, and, furthermore, the loudspeakers should also be removed when the garment has become unusable.

The shape of the strip 6 is such that it completely fills the inner collar space, so that the location of the loudspeakers 4 is unambiguously fixed. With a suitable design this strip can contribute to a good shape stability of the collar 2. Both loudspeakers are connected to a connecting cord 7 with a usual connecting plug 8 for making a connection with the signal source. The rigidity of the collar thus obtained contributes to its remaining well in the turned-up position in which the loudspeakers 4 are directed towards an adjacent ear of the wearer of the garment. In this position the best sound transfer will take place, so that the sound intensity can be correspondingly lower, and other people in the surroundings need not be disturbed thereby.

The collar protects the loudspeakers against environmental influences, especially if the collar or part of it consists of a waterproof material.

It will be clear that, apart from the loudspeakers, microphones can also be included in the garment, if the radio or tape apparatus is also adapted for transmitting or recording respectively, and then the or each microphone could, preferably, be positioned as closely as possible near the chin of the wearer, e.g. at a front end of the strip 6. The actuation of the radio or tape apparatus for switching over from transmitting to receiving or from recording to reproducing respectively, should, of course, be easily accessible and, as the case may be, a commutator arranged in a sleeve or pocket and connected to the apparatus by means of a cord can be used.

Moreover additional hems and/or passages for the cord 7 can be provided in the garment in order to lead it towards an apparatus inserted in a pocket 5 or in the immediate vicinity of an apparatus carried in a different way without impediment for the wearer of this garment. If necessary, space for inserting an aerial can be provided, and also the cord 7 can serve as an aerial.

Such a garment is not only designed for persons who want to listen continually to music from a radio or tape apparatus, but also for persons who should be easily reached during their work by wireless. The advantage is that the user can keep his hands completely free, and the loudspeakers will not hinder his movement. The drawback of loose straps which can get caught behind objects and, thus, can be dangerous is thus also avoided. The loudspeakers are, moreover, arranged in the collar fully invisibly, so that the garment does not differ outwardly from a normal

garment. The location of the loudspeakers in respect of the ears of the user is, in particular in the turned-up position of the collar, very favourable, so that noise disturbance of others will be avoided as much as possible.

It will be clear that, instead of a zip fastener 3, also other fastener types can be used, e.g. with barbed tape. In the case of two loudspeakers stereo reproduction can, of course, be obtained, but the invention is not restricted to the use of two loudspeakers.

Manufacturing such a garment is as cheap as possible, since the loudspeakers can be connected to an arbitrary portable sound reproducing apparatus which can be carried in any suitable manner, e.g. in an inner or outer pocket of a garment or on a strap or belt or the like.

80 CLAIMS

1. A garment having a collar which accommodates at least one loudspeaker therein positioned such as to be adjacent an ear of the wearer, the or each loudspeaker having means for connection to an electrical signal source.

2. A garment as claimed in claim 1, wherein the collar is provided with a fastener adapted to be opened so as to remove the or each loudspeaker.

3. A garment as claimed in claim 1 or 2, wherein the or each loudspeaker is arranged on a carrier fitting in the collar.

4. A garment as claimed in claim 3, wherein the carrier is a rigidly-flexible plate or strip adapted to the shape of the collar and stiffening the collar.

5. A garment as claimed in any one of claims 1 to 4, which is provided with an additional inner pocket for inserting therein an electric signal source.

6. A garment as claimed in any one of claims 1 to 5, wherein apertures and/or hems are provided for leading therethrough connecting cords.

7. A garment as claimed in any one of claims 1 to 6, wherein at least the collar is at least partly made of waterproof material.

8. A garment as claimed in any one of claims 1 to 7, further comprising at least one microphone in or near the collar which microphone is adapted for connection to a transmission or recording apparatus.

9. A garment as claimed in claim 8, further comprising commutation means or terminals therefor which are easily accessible and, in particular, are provided in a sleeve or outer pocket.

10. A garment with a collar, in particular in the form of a coat, characterised in that in the collar, in points which will be situated substantially below the ears of the user, at least one loudspeaker is included, the or each loudspeaker being adapted to be connected to a source of electrical sound signals, in particular a radio or tape apparatus.

11. A garment substantially as herein described with reference to the accompanying drawings.